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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,581	06/27/2003	Tadashi Tsunoda	TOW-029RCE	8412

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LAHIVE & COCKFIELD
28 STATE STREET
BOSTON, MA 02109

EXAMINER

CHUO, TONY SHENG HSIANG

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 10/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/608,581	TSUNODA, TADASHI	
	Examiner	Art Unit	
	Tony Chuo	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 4-6, and 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Sato (EP 0357025). Regarding claim 1, the Sato reference teaches a fuel cell comprising a pair of separators "24" and cell members "28" interposed between the separators wherein each cell member includes a fuel electrode "25", an air electrode "27", and a solid electrolyte "26" interposed between the fuel electrode and the air electrode, wherein a first area for providing the cell members is formed between the separators; each of the separators includes an upper plate "22" and a lower plate "23" stacked together to form a second area between the upper plate and the lower plate; the second area is divided by a wave form member "21" into a fuel gas channel "34" and an oxygen containing gas channel "33" that includes a ridge protruding from the upper plate to contact the lower plate; the fuel gas channel formed in one of the separators is connected to the first area through fuel supply inlet "31" for supplying fuel gas to the fuel electrodes of the cell members; and the air gas channel formed in the other of the separators is connected to the first area through air supply inlet "30" for supplying air to

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the air electrodes of the cell members (See page 4 line 44 to page 5 line 38 and Figures 6-9).

Regarding claims 4 and 8, it also teaches fuel gas and air gas that are supplied through the fuel supply inlet "31" and the air supply inlet "30" to central regions on opposite surfaces of the cell members, respectively (See Figures 8 and 9).

Regarding claims 5 and 9, it also teaches upper plate "22", lower plate "23", and wave form members "21" that form first and second bosses that protrude toward each other for sandwiching the cell members "28" (See Figure 6).

Regarding claim 6 and 10, it also teaches electrically connecting the metallic separators on the upper and lower ends of the flat plate type solid electrolyte fuel cell (See page 5 lines 26-27). Therefore, the metallic separators are also current collectors for collecting electric energy produced by chemical reactions of the fuel gas and oxygen containing gas supplied to opposite surfaces of the cell members.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato (EP 0357025) in view of Sigiura et al (US 2002/0146601). The Sato reference is applied to claims 5 and 9 for reasons stated above. However, the reference does not

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expressly teach first bosses that protrude toward the electrolyte electrode assemblies by a large distance in comparison to the second bosses. The Sigiura reference teaches first bosses formed by separator "32" that protrude toward the electrolyte electrode assembly "18" by a large distance in comparison to the second bosses formed by separator "30" (See paragraph [0062],[0066]). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Sato separators to include first bosses that protrude toward the electrolyte electrode assemblies by a large distance in comparison to the second bosses in order to increase the flow velocity in the gas passages that have smaller cross sections so that water is effectively removed from the gas passages to prevent drainage problems.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Chuo whose telephone number is (571) 272-0717. The examiner can normally be reached on M-F, 8:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Trainer Susy Tsang-Foster can be reached on (571) 272-1293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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TC



SUSY TSANG-FOSTER
PRIMARY EXAMINER